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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/735,114

12/12/2003

ChiaHua Ho

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1904

25920

7590

01/24/2006

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EXAMINER

LE, THONG QUOC

ART UNIT

PAPER NUMBER

2827

DATE MAILED: 01/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/735,114	HO ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thong Q. Le	2827	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 December 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-20 is/are rejected.
- 7) ☒ Claim(s) 12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

### **DETAILED ACTION**

1. Amendment filed on 12/30/2005 has been entered.
2. Claims 1-20 are presented for examination.

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. Claims 1-11,13-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Nickel et al. (U.S. Patent No. 6,603,678).

Regarding claims 1,16, Nickel et al. disclose a magnetic random access memory (MRAM) cell (Figure 3), comprising:

a word line (Figure 3, 116) ;

a bit line (Figure 3, 118) perpendicular to the word line;

a magnetic device (Figure 3, 114) disposed at an intersection of the word line and the bit line (Figure 3), the magnetic device having a first end and a second end (Figure 4, 120a); and

a pair of writing magnets (Figure 4, 120a), one of the pair of writing magnets disposed opposite the first end of the magnetic device (Figure 4) and separated from the first end of the magnetic device by an insulator (Figure 4, 120b); another of the pair of writing magnets disposed opposite the second end of the magnetic device and separated from the second end of the magnetic device by an insulator (Figure 4, 120b), wherein the pair of writing magnets switches a magnetic alignment of the magnetic device during a write operation (Column 15-22, Column 4, lines 8-24).

Regarding claims 2-6, 17-20, Nickel et al. disclose wherein a current in the word line and the bit line generates a magnetic field on the pair of writing magnets during the write operation (Column 3, lines 15-22, Column 4, lines 14-30), and wherein the pair of writing magnets and the magnetic device are aligned along a long axis of the memory cell (Figure 3, 120), and wherein the long axis of the memory cell is not aligned with the word line and the long axis is not aligned with the bit line (Figure 3, 120, not aligned with 118 ,116), and wherein the magnetic device (Figure 3, 114) includes a magnetic tunnel

junction (MJT) (Column 2, line 22-23), and wherein the magnetic device includes a giant magnetoresistance (GMR) material (Column 2, lines 20-25).

Regarding claims 7-10, Nickel et al. disclose wherein the magnetic device includes a colossal magnetoresistance (CMR) material, and wherein the magnetic device includes an anisotropic magnetoresistance (AMR) material, and wherein each writing magnet includes a soft ferromagnetic material, and wherein each writing magnet includes a general ferromagnetic material (Column 2, lines 19-20, any element having a resistance, Column 3, lines 23-30).

Regarding claims 11, Nickel et al. disclose a method for performing a write operation to a magnetic random access memory (MRAM) cell, comprising the operations of: supplying a current to a word line and a bit line of the MRAM cell (Column 4, lines 14-22); generating a magnetic field using the currents in the word line and the bit line (Column 1, lines 25-30), wherein the magnetic field is applied to a pair of writing magnets disposed at either end of a magnetic device (Column 1, lines 32-40), and generating a field strength using the writing magnets, the field strength capable of switching a magnetic alignment of the magnetic device (Column 1, lines 27-30).

Regarding claims 13-15, Nickel et al. disclose wherein each writing magnet includes a soft ferromagnetic material, and each writing magnet includes a general ferromagnetic material (Column 2, lines 19-22), and wherein the pair of writing magnets and the magnetic device are aligned along a long axis of the memory cell (Figure 3, 120).

***Allowable Subject Matter***

6. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 12 include allowable subject matter since the prior art made of record and considered pertinent to the applicant's disclosure does not teach or suggest the claimed limitations. Nickel et al. (U.S. Patent No. 6,603,678), and others, does not teach the claimed invention having a current applied to the word line and bit line is on order of magnitude of 100A.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thong Q. Le whose telephone number is 571-272-1783. The examiner can normally be reached on 8:00am-5:00pm M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Zarabian Amir can be reached on 571-272-1852. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Thong Q. Le', with a stylized, flowing script.

Thong Q. Le  
Primary Examiner  
Art Unit 2827

1/19/2006